

Document Title: Oil level sensor, changing	Function Group: 217	Information Type: Service Information	Date: 2015/3/3 0
Profile: EXC, EC160D NL [GB]			

Oil level sensor, changing

Op nbr 217-005



Risk of burns - stop the diesel engine and allow it to cool down before starting any work.

NOTE!

Cable ties and clamps that secure hoses and electrical wiring must be removed and then replaced when installing.

1. Place the machine in the service position B. See [091 Service positions](#)
2. Turn the battery disconnect switch to off position.
3. Remove the engine room under covers.

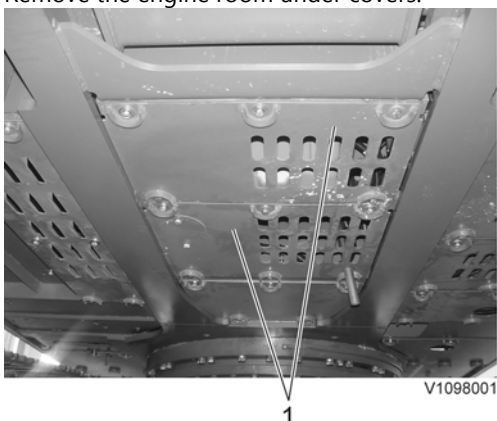


Figure 1

1. Engine room under cover
4. Open the oil drain valve cap and install the engine oil drain hose and then allow the oil to drain from the engine into a suitable collection container.



Figure 2

1. Engine oil drain valve cap
5. Disconnect wire harness connector and then remove all clamps and ties.

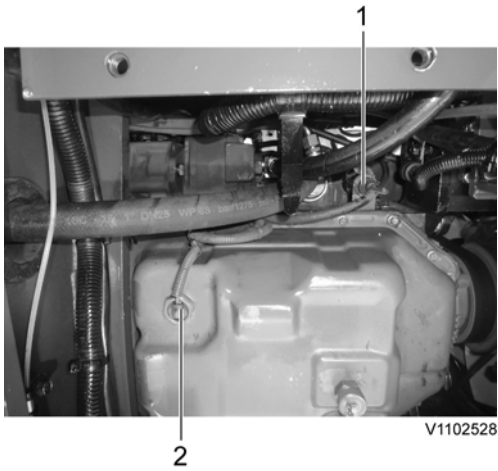


Figure 3

1. Wire harness connector
2. Oil level sensor
6. Remove the oil level sensor and replace it as a new one.
7. Restore the machine to operating condition.
8. Fill the engine oil through the engine oil filling port

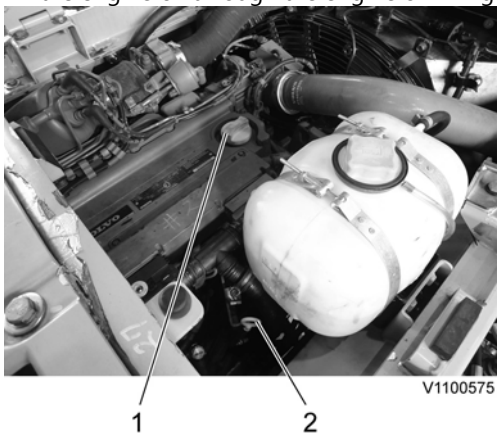


Figure 4

1. Engine oil filling port cap
2. Dipstick gauge

NOTE!

Engine Oil capacity: see [030 Specification, filling capacities](#).

9. Set the ignition switch to "ON" position and check the oil level on the I-ECU.



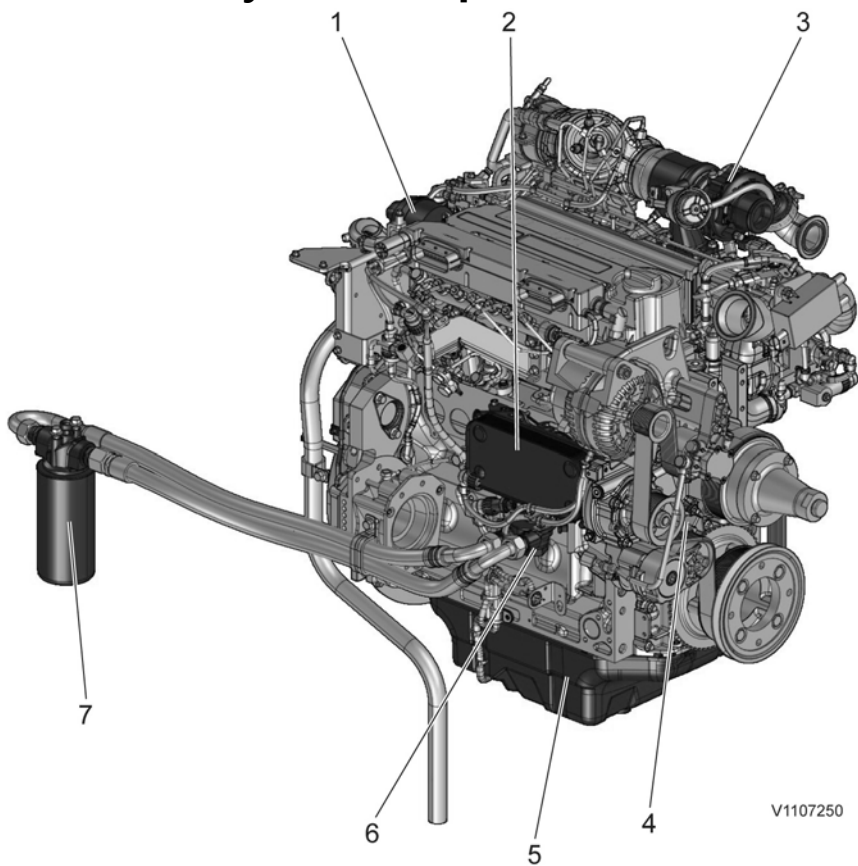
V1050080

Figure 5

10. Install the engine room under covers.

Document Title: Lubrication system, component locations	Function Group: 220	Information Type: Service Information	Date: 2015/3/3 0
Profile: EXC, EC160D NL [GB]			

Lubrication system, component locations



V1107250

Figure 1

1. Crankcase ventilation duct
2. Engine oil cooler
3. Turbocharger
4. Oil pump
5. Oil pan
6. Engine oil remote port
7. Engine oil filter

Document Title: Lubrication oil pressure, checking with pressure gauge	Function Group: 221	Information Type: Service Information	Date: 2015/3/3 0
Profile: EXC, EC160D NL [GB]			

Lubrication oil pressure, checking with pressure gauge

Op nbr 221-022

[11666052 Pressure gauge](#)

[14290266 Hose](#)

[15018967 Testing nipple](#)

NOTE!

The check should be performed with the engine at operating temperature.

1. Place the machine in service position B, see [091 Service positions](#).
2. Turn off the electric power with the battery disconnect switch.
3. Remove the engine room under covers.
4. Remove the engine oil port under the oil cooler.

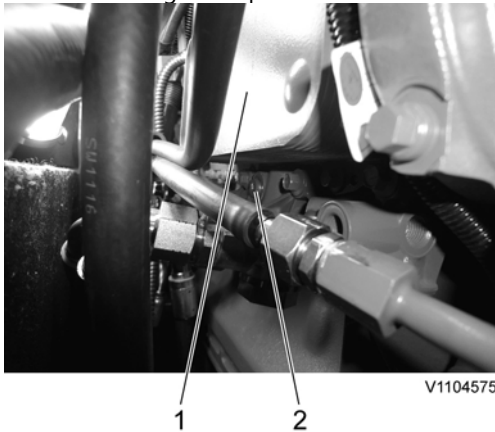
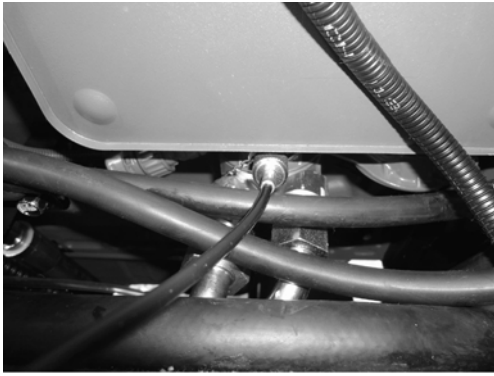


Figure 1

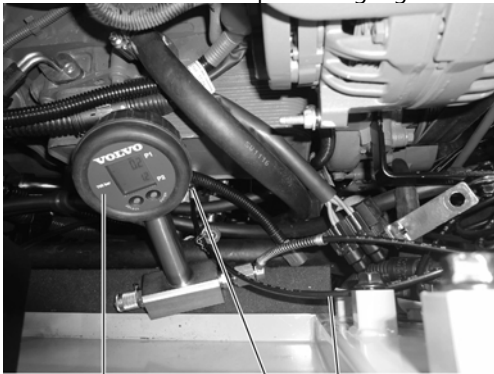
1. Engine oil cooler
 2. Port
5. Install the nipple.



V1104576

Figure 2

6. Install the hose and the pressure gauge



V1104577

Figure 3

1. Pressure gauge
2. Testing nipple
3. Hose

7. Start the engine and warm up to operating temperature.
8. Check the oil pressure, see [220 Lubrication system, specifications](#). Compare the measured value with that which was shown by the VcadsPro test 28407-3.
9. Restore the machine to the operating condition.

Document Title: Fuel system, component location	Function Group: 230	Information Type: Service Information	Date: 2015/3/3 0
Profile: EXC, EC160D NL [GB]			

Fuel system, component location

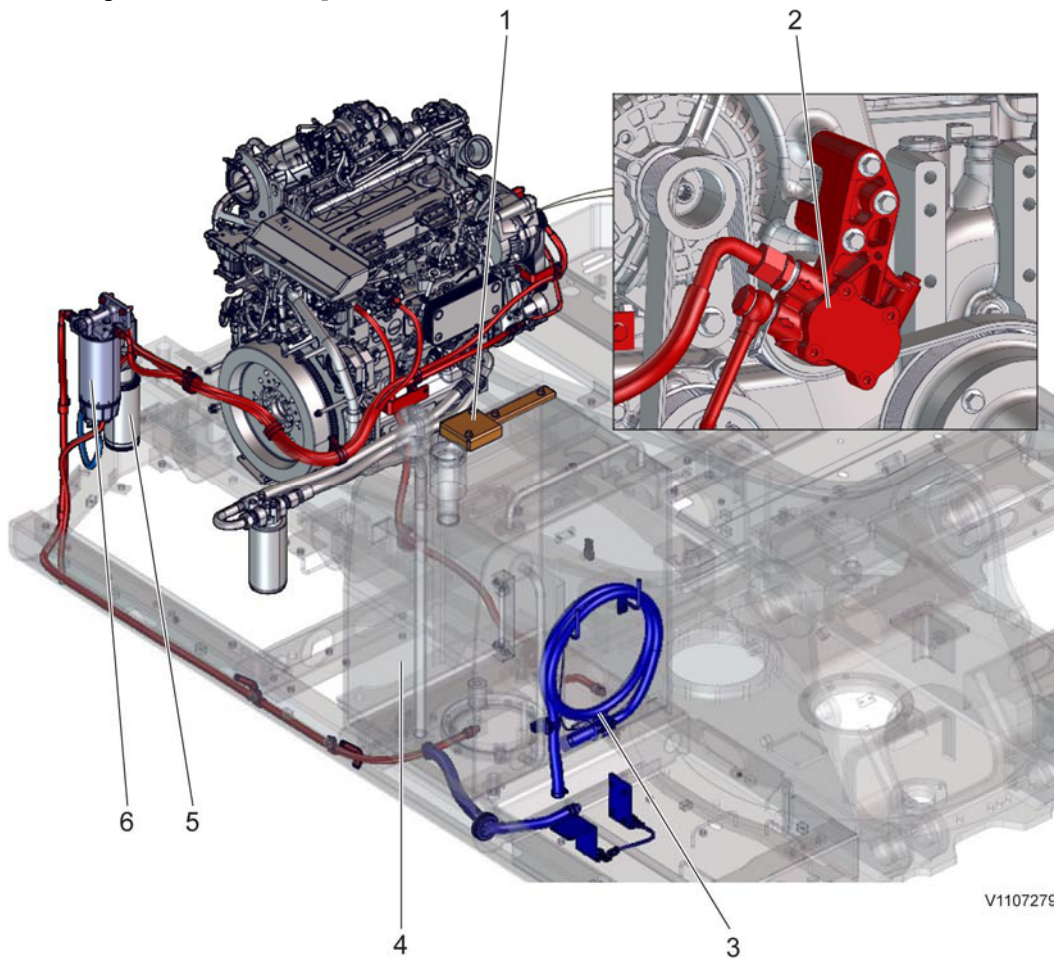


Figure 1

1. Fuel level sensor
2. Fuel pump
3. Fuel filling pump hose
4. Fuel tank
5. Fuel filter
6. Water separator filter element

Description

- [230 Fuel system description](#)

Document Title: Carbon monoxide in fuel system, check	Function Group: 230	Information Type: Service Information	Date: 2015/3/3 0
Profile: EXC, EC160D NL [GB]			

Carbon monoxide in fuel system, check

Carbon monoxide in fuel tank, check with carbon monoxide tester

Op nbr 230-001

[9808038 Leak detector](#)

1. Run the engine until it is warm.
2. Dismantle 9808038 Leak detector.
Lubricate the O-rings with silicone grease or clean vaseline.
3. Fill both chambers with reaction fluid up to the indicated line.
4. Cover the inlet hole at the same time as the carbon monoxide tester is assembled so that no fluid is pressed out.
NOTE!
The carbon monoxide tester and its fluids may not be exposed to cigarette smoke, exhausts, or similar.
Conduct the test on a machine that is not recently refuelled.
5. Rev up the engine several times.
6. Turn off the engine and open the tank cap.
Place 9808038 Leak detector over the tank opening and pump 3–5 times on the rubber bulb to suck in air from the tank. Wait 10–15 seconds to see if the reaction fluid reacts.
NOTE!
Fuel may not be sucked into the carbon monoxide tester.
If the reaction fluid in 9808038 Leak detector changes colour, this indicates that there is carbon monoxide in the tank.
Very small quantities of carbon monoxide are often present in the machine's systems, that is why the measurement should be repeated if the first measurement generates a reaction.
7. Suck fresh air into 9808038 Leak detector by pumping a few times on the bulb. Pump until the reaction fluid has returned to its original colour.
8. Ventilate the air above the filler hole to the tank and repeat the test.
NOTE!
Do not blow with exhaled air as it contain carbon dioxide.
9. Reinstall the tank cap.

Document Title: Feed pump, checking feed pressure	Function Group: 233	Information Type: Service Information	Date: 2015/3/3 0
Profile: EXC, EC160D NL [GB]			

Feed pump, checking feed pressure

Op nbr 233-004

[15018967 Testing nipple](#)

[14290266 Hose](#)

[11666052 Pressure gauge](#)



WARNING

High pressure. Wait 30 seconds after switching off the engine before working on the fuel system.

NOTICE

Maintain greatest possible cleanliness when working on the fuel system.

Testing conditions

1. Batteries are in good conditions and fully charged.
2. Abnormal fuel feed pressure value with VCADS Pro. See [030 Fuel pressure specifications](#).

Pressure checking procedures

1. Place the machine in service position B, see [091 Service positions](#).
2. Turn off the electric power with the battery disconnect switch.
3. Open the engine hood.
4. Disconnect the wire-harness connector.

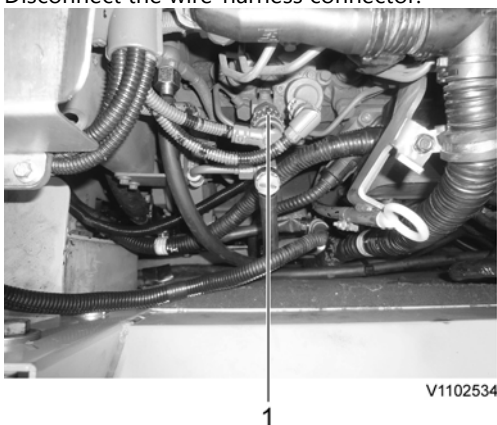


Figure 1

1. Wire-harness connector

5. Remove the pressure sensor.

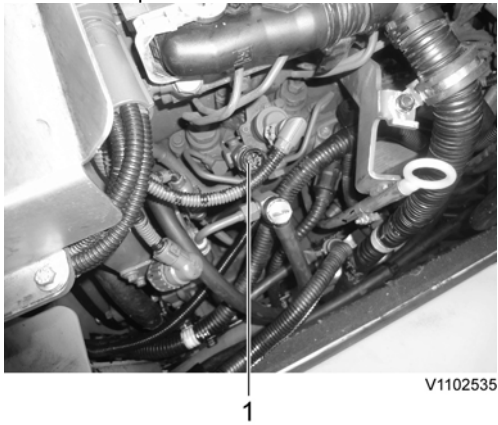


Figure 2

1. Sensor

6. Install the nipple, hose and the pressure gauge on the connection for incoming fuel.

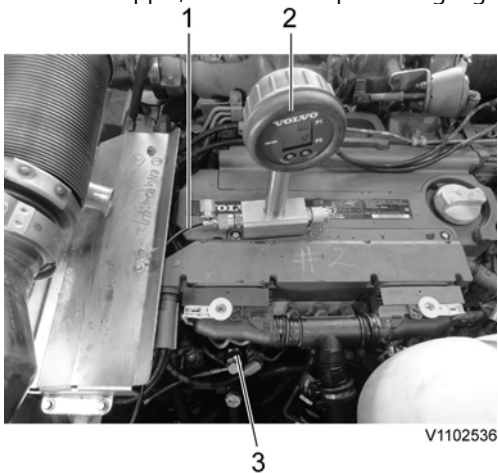


Figure 3

1. 14290266 Hose
2. 11666052 Pressure gauge
3. 15018967 Testing nipple

7. Bleed the fuel system according to [233 Fuel system, bleeding](#).

Engine running

8. Start the engine.
9. Put the control lockout lever in the unlocked (up) position. Check if the fuel feed pressure values are according to the specifications without load and with load. See [030 Fuel pressure, specifications](#).

NOTE!

Create the hydraulic load by moving the dipper arm and the bucket to their full stroke.

NOTE!

Check the pressure at the different positions of the engine speed control switch, see [030 Fuel pressure, specifications](#). The pressure values should be stable at each positions.

In case the output pressure is not normal

Check the fuel tank, water separator, fuel line and fuel feed pump.

In case the pressure is normal

Check the fuel filter and the fuel line to the fuel control unit.

10. Stop the engine.
11. Remove the nipple, hose and the pressure gauge on the connection for incoming fuel.
12. Restore the machine to operating condition.

Document Title: Fuel system, bleeding	Function Group: 233	Information Type: Service Information	Date: 2015/3/3 0
Profile: EXC, EC160D NL [GB]			

Fuel system, bleeding

Op nbr 233-001

1. Place the machine in the service position B. See [091 Service positions](#)
2. Turn the hand pump counterclockwise to unlock the plunger. Pump approximately 200 to 300 strokes until a heavy resistance can be felt. Push the plunger down and turn clockwise to lock into position. Then bleed the fuel system.



1

Figure 1

1. Hand pump on the filter head.

NOTE!

Air bleeding may not be performed using the starter motor.

3. Start the engine and let it idle at low idle speed for a few minutes. If the engine is difficult to start, bleed again with the hand pump.

NOTE!

The hand pump must not be used when the engine is running.

NOTE!

Run the engine at idle for 5 minutes before increasing the engine rpm, to allow purging of any remaining air.

Document Title: Fuel tank, description	Function Group: 234	Information Type: Service Information	Date: 2015/3/3 0
Profile: EXC, EC160D NL [GB]			

Fuel tank, description

The fuel tank acts as a reservoir for supplying fuel to the engine. It is mounted towards right side of the upper frame. Refer to [030 Fuel tank, specifications](#) for the fuel tank filling capacity.

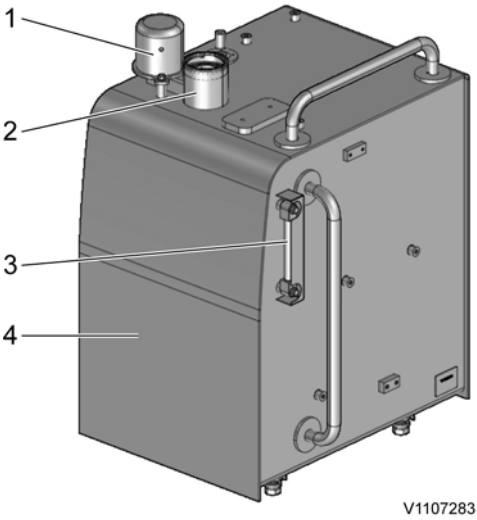


Figure 1

- 1. Fuel tank air ventilation filter
- 2. Strainer
- 3. Fuel level gauge
- 4. Fuel tank

NOTE!

When install the tank assembly, use shim and accord with frame surface.

NOTE!

10 mm clearance should be confirmed whether it is parallel to it's counterpart in micrography.

5mm (INSIDE OF UPPER FRAME)

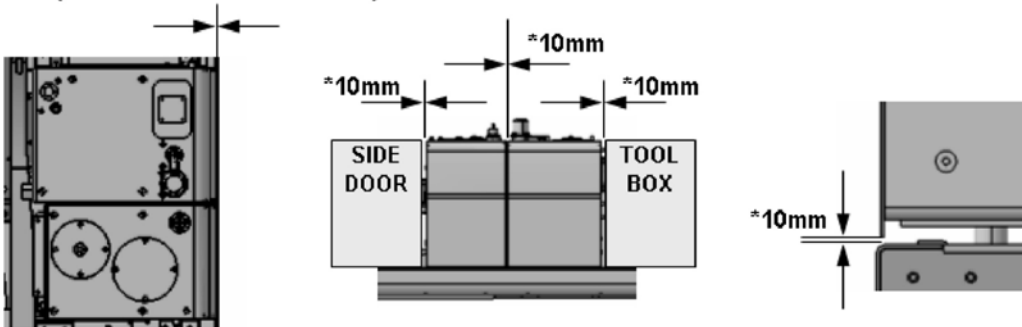


Figure 2

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